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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/079,864	05/15/1998	JASON P. RHODE	2836-P190US	8805

7590

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James J Murphy Esq  
Winstead Sechrest & Minick PC  
PO Box 50784  
1201 Elm Street  
Dallas, TX 75270

EXAMINER

GRIER, LAURA A

ART UNIT	PAPER NUMBER
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2644

DATE MAILED: 09/08/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/079,864

Applicant(s)

RHODE ET AL.

Examiner

Laura A Grier

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7, 10-22 and 25-30 is/are rejected.
- 7) ☒ Claim(s) 8, 9, 23 and 24 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. **Claims 1, 10, 17 and 25** are rejected under 35 U.S.C. 102(b) as being anticipated by Tofte, U.S. Patent No. 4747142.

Regarding **claims 1, 10 and 17** Tofte discloses a three-track stereophonic system.

Tofte's disclosure comprises a conventional stereo sound source such a FM stereo tuner or a tape deck producing a left and right channel signal inputs (figure 1 and col. 1, lines 57-68 and col. 2, lines 1-15), the signal are filtered (step 1), accordingly, compressed (step 2) and respective filtered left and right channels are combined (step 3), expanded (step 4) and step 5, combined via amplifiers, which constitutes as a driving circuit to generate a left channel output, a right output and center output (common mode output), respectively, wherein the center output includes combined left and right signals, the left output includes combined left, right and center signals, and the right output includes combined right, left and center signals, which indicates each output being dependent upon each other for reducing clipping effects, which is supported by the fact that the signals are compressed and expand (col. 2, lines 10-68 and col. 3, lines 1-37).

3. Regarding **claim 25**, it has been interpreted and thus rejected for the same reasons set forth above in the rejection of **claim 10**. Since **claim 25** discloses a method which corresponds

to the apparatus of **claim 10**, the method is obvious in that it simply provides functionality for the logical implementation found in **claim 10**.

Regarding **claims 2, 11 and 18**, Tofte discloses everything claimed as applied above (see claim 1 and 10, respectively). Tofte further discloses the center output (common mode output) providing a feedback to the left and right channels (figure 1).

Regarding **claims 12 and 19**, Tofte discloses everything claimed as applied above (see claim 1 and 10, respectively). Tofte further discloses a 1<sup>st</sup> amplifier for driving a left output signal, and 2<sup>nd</sup> amplifier for driving a right output signal and 3<sup>rd</sup> amplifier for driving a center output (common mode output) - (figure 1).

Regarding **claim 13**, Tofte discloses everything claimed as applied above (see claim 10). Tofte further discloses the 3<sup>rd</sup> amplifier (center output amplifier) providing an input to the 1<sup>st</sup> amplifier and 2<sup>nd</sup> amplifier (figure 1).

Regarding **claim 14**, Tofte discloses everything claimed as applied above (see claim 10). Tofte further discloses the 1<sup>st</sup> and 2<sup>nd</sup> signals as outputs from a conventional stereo tuner or tape deck, which provides support the signals are analog, and further the amplifiers' outputs are single-ended (figure 1).

Regarding **claims 15 and 20**, Tofte discloses everything claimed as applied above (see claims 10 and 17, respectively). Tofte further discloses the 1<sup>st</sup> and 2<sup>nd</sup> signals as outputs from a conventional stereo tuner or tape deck, which provides support the signals are analog, wherein the 1<sup>st</sup> and 2<sup>nd</sup> signals are left and right channels and provide left and right channel outputs.

Regarding **claim 26**, it has been interpreted and thus rejected for the same reasons set forth above in the rejection of **claim 11**. Since **claim 26** discloses a method which corresponds to the apparatus of **claim 11**, the method is obvious in that it simply provides functionality for the logical implementation found in **claim 11**.

Regarding **claim 27**, Tofte discloses everything claimed as applied above (see claim 25). Tofte further discloses the 1<sup>st</sup> and 2<sup>nd</sup> signals as left and right audio input signals.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claims 3-7, 16, 21-22, and 28-30** are rejected under 35 U.S.C. 103(a) as being unpatentable over Tofte in view of the applicant's admitted prior art.

Regarding **claims 3 and 4** Tofte discloses everything claimed as applied above (see claim 2). However, Tofte fails to specifically disclose the audio system comprising three-wire stereo headphones coupled to the circuitry and being a portable audio system. The examiner maintains that such headphones and audio system were well known in the art. The applicant's admitted prior art discloses a small portable stereo system coupled with a three-wire headphone set. It would have been obvious to one of the ordinary skill in the art the time the invention was made to modify the invention of Tofte by implementing the stereo system in small size that can be

transported with ease and headphones accompanied therein for personal or individual listening convenience and a lack of disturbances to others people around the listener.

Regarding **claims 5 and 21** Tofte discloses everything claimed as applied above (see claim 2). However, Tofte fails to specifically disclose the audio signal as a digital signal. The examiner maintains that digital signals were well known in the art. The applicant's admitted prior art provides support the left and right channel input signals being a digital signals by providing an DAC. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Tofte by implementing the use of digital, wherein the use of digital signal and/or digital technology is commonly used the art of audio signal processing for optimal sound quality as desired.

Regarding **claim 6**, Tofte and the applicant's admitted prior art (Tofte et al.) discloses everything claimed as applied above (see claim 5). Tofte further discloses a 1<sup>st</sup> amplifier for driving a left output signal, and 2<sup>nd</sup> amplifier for driving a right output signal and 3<sup>rd</sup> amplifier for driving a center output (common mode output) - (figure 1).

Regarding **claims 16 and 30** Tofte et al. discloses everything claimed as applied above (see claim 15 and 27, respectively). However, Tofte fails to specifically disclose the audio system comprising three-wire stereo headphones coupled to the circuitry. The examiner maintains that such headphones were well known in the art. The applicant's admitted prior art discloses a small portable stereo system coupled with a three-wire headphone set. It would have been obvious to one of the ordinary skill in the art the time the invention was made to modify the invention of Tofte et al. by implementing the stereo system with headphones accompanied

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therein for personal or individual listening convenience and a lack of disturbances to others people around the listener.

Regarding **claims 7 and 22**, Tofte et al. discloses everything claimed as applied above (see claim 1 and 21). However, Tofte fails to specifically disclose the audio system comprising DAC (digital-to-analog converters) coupled to the amplifiers. The examiner maintains that DACs were well known in the art. The applicant's admitted prior art discloses a DAC, wherein it would have been obvious to one of the ordinary skill in the art at time the invention was made to modify the invention Tofte et al. by implementing a DAC comprising a 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> DAC for the purpose converting the digital signal to an analog prior to input.

Regarding **claims 27 and 28**, Tofte et al. discloses everything claimed as applied above (see claim 27). However, Tofte fails to specifically disclose the audio system comprising DAC (digital-to-analog converters) coupled to the amplifiers. The examiner maintains that DACs were well known in the art. The applicant's admitted prior art discloses a DAC, wherein it would have been obvious to one of the ordinary skill in the art at time the invention was made to modify the invention Tofte et al. by implementing a DAC comprising a 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> DAC for the purpose converting the digital signal to an analog prior to input. Further, processing an audio to provide both DACs and ADCs (analog-to-digital converters) application is commonly known in the art. Thus, it would have been obvious to one of the ordinary skill in the art at the invention was made to modify the invention of Tofte et al. by providing an ADCs after input or processing for the purpose of regenerating the signal to its original form, analog for adequate audio output.

***Response to Arguments***

6. Applicant's arguments filed 06/13/03 have been fully considered but they are not persuasive.

The applicant essential argues that the primary reference of prior art, Tofte, fails to disclose the claimed invention. The arguments are specific in respect (independent claims 1, 10, 17 and 25) to the disclosed invention in the specification, particularly, providing an amplifier in a quasi-differential fashion of powering audio signals and providing a common mode output voltage. However, the arguments of the applicant are not parallel to the claim language of the invention. The claim language of the claims fails to limit the invention to a quasi-differential amplifier for providing common mode output voltage combined of a combination of a left and right channel input signals. As written, the claims are support by the prior art of Tofte as indicated the rejection set forth above, wherein in respect the described function (in the arguments) of an amplifier functioning in a quasi-differential fashion, Tofte teaches a left, right and common channels dependent upon each other and coupled with an amplifier, which may comprise amplifiers that operate in a differential mode.

Further, the applicant argues that concept of the invention for providing a common mode voltage in quasi-differential fashion for the purpose of reducing the clipping effects in the output. The reference of Tofte supports the of reducing the clipping effect is evident by the fact that the processing of the left and right signals comprises being processed via companders and expanders which helps the control the voltage level(s) of audio outputs.



***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura A Grier whose telephone number is (703) 306-4819. The examiner can normally be reached on Monday - Friday, 7:30 am - 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Forester W. Isen can be reached on (703) 305-4386.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

**Or faxed to:**

**(703) 872-9314 (for Technology Center 2600 only)**

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Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,  
Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding  
should be directed to the receptionist whose telephone number is (703) 305-4700.

LAG

August 27, 2003

  
MINSUN OH HARVEY  
PRIMARY EXAMINER